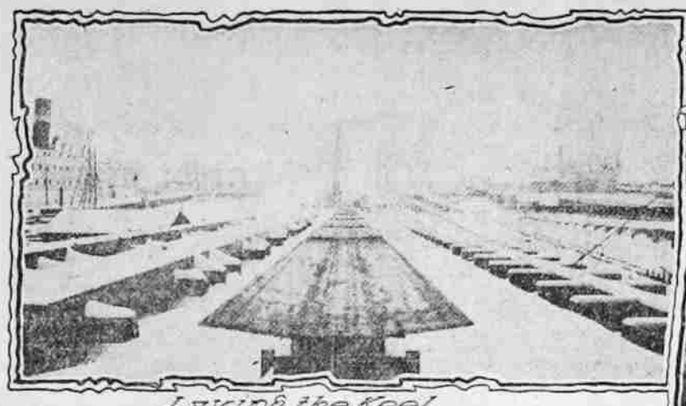
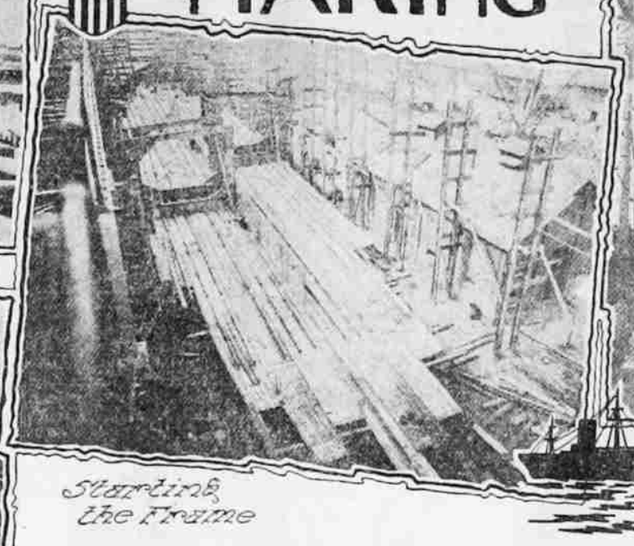
THE STEEL SHIP IN THE MAKING



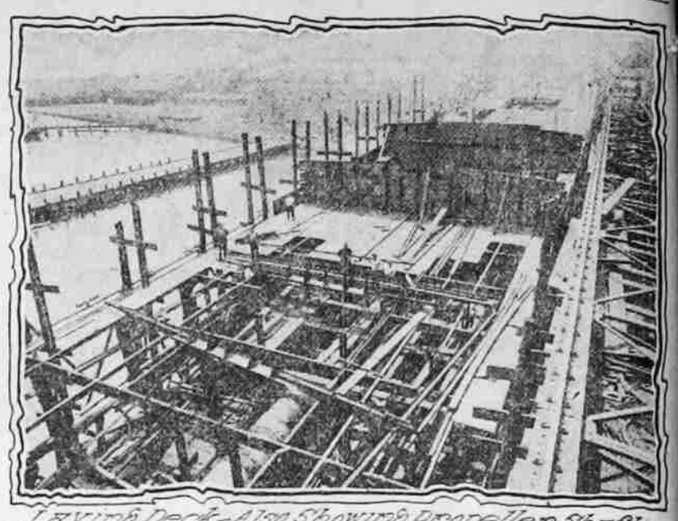
Laying the Keel

Nearing Completion



Starting the Frame

The Launching



Laying Deck-Also Showing Propeller Shaft

Giant Strides In Ship Building Under the New "Standardization" System = A Steel Ship In Its Construction.

ANYONE WHO has the slightest knowledge of the preparation of our country in this war is aware of the great number of contracts which have been let for the construction of ships. Not only all of the regular ship yards are working to their full capacity, but many other contractors are undertaking the building of vessels for use in this great struggle. As time is more important than money the United States Government has been quite liberal in its conditions with the view of encouraging extra efforts in the furnishing of this part of our military equipment. Then again this policy may be a far-sighted one, for the successful issue of the war will impose upon us a greater and more responsible position in international affairs and as the commerce of Germany will be impaired, if not destroyed, we will be fully equipped to take our place among the front rank of nations in the carrying trade. Thus one of the indirect results of the war will be the establishment of a merchant marine and once more the stars and stripes will fly from our shipping in every port of the world.

All Kinds Of Ships.

There was much delay in the ship-building programme owing to the haggling of the shipping board as to whether we should build steel or wooden ships, but finally after the entire country was disgusted over the delay, new members were appointed on the board and that body came to the conclusion that ships of all kinds would be built, in fact, any kind of a vessel which could cross the Atlantic would be acceptable as a carrier of food and men, so wooden ships, steel ships and even concrete ships were contracted for. Thousands of men were enlisted in the work and soon ships began going off the ways and carrying their loads of humanity and freight across the ocean. Already many of these new ships have been sunk but others are ready to take their places and we must build and build until we have many times the number which have been sunk by Germany's piratical submarines.

"Standardization."

One of the greatest helps in the ship building programme is what is called "Standardization" or "Fabrication"—that is that certain ship yards build vessels of certain sizes only, and certain factories prepare the material for each yard.

In the old days when one visited a ship yard vessels of various kinds and sizes were found on the ways and iron and steel in all shapes was scattered about the yard. Today all this is changed and you will find 3,500 ton carriers being built at one yard, 5,000 ton carriers at another and 7,000 and 8,000 and 9,000 and 12,000 at others. Before the work of "Standardization" was completed model ships were built and tested and then taken apart and these parts were then sent to different fabricating factories. The output of these shops was then commandeered by the Government. Consequently only about 18 per cent. of the actual work of ship building is done in the yards, while 82 per cent. is done in the fabricating shops. The benefits as to workmanship and speed are incalculable and if all goes well by the end of 1918 the United States will have built 8,000,000 tons of ships besides the 2,000,000 tons commandeered. One hundred and fifty ship yards are busy turning out ships to build the bridge of victory and an army of 200,000 men are doing the work. More are learning the ship building trade at schools established for this purpose.

Steel Ship Assembling.

The steel ships in the building or rather in the assembling (for the parts are sent to the yard ready to be put in place) is an interesting study especially if the visitor is fortunate enough to be able to watch the growth of the ship from time to time during its construction from the laying of the keel to the launching.

When a vessel is to be constructed the drawings are completed after which the work is taken up by the construction force and preparations are made to lay the keel. First the groundways are laid directly on the ground being built up of timber laid thereon tier crosswise, the upper surface being completed by the "sliding plank." The surface of the sliding plank is not a plane one but what is known in shipping terms as "cambered," that is a longitudinal section of it is an arc of a circle of very great radius, the curves being convex upwards. This shape is used to guard against the great velocity attained by a ship when it starts down the way at its launching. The keel blocks are next put in position. There is a great deal of mathematical calculation about the laying of these as to their height and slope. Should these be set at a wrong angle direful things might happen at the launching. The keel plates have meanwhile been brought over by the big derricks and made ready to be put in position. They are merely a large metal floor perforated with a great number of holes in which pins may be placed. The moulds of the frame are laid on the bending slab and pins inserted along its edge. The inner and outer flat keels form edge strips and buttstraps to one another and in addition buttstraps are fitted to both keels. The final fitting of the keel plates is made after the stem and stern castings are erected.

The double bottom space is divided up into water tight and oil tight compartments and solid frames have to be provided between any two of these, the framing must be arranged to provide for this space. The type of transverse framing fitted in double bottoms such as in the ships shown in the accompanying photographs are bracket lightened plate water tight and oil tight. Looking down from above a steel ship at this stage resembles a huge bee hive which has been laid flat showing the honey comb spaces. The special framing now has to be worked around shaft swell and recess to take the stern castings. The lining off of the frames usually carried out by the scrive board system can be worked out with great rapidity.

Gradually the frames are put into place and at this point the vessel resembles a steel bridge. Millions of rivets of various kinds are used and one wonders at the prodigality of rivets which seems to be everywhere in a ship yard. They are of many kinds, but by the present methods of ship building there is no delay in finding the correct sizes for each and every attachment needed in the building of each ship is sent directly to the yard where that class of ship is being built.

The bottom plating is generally double riveted or even treble riveted. As the frames become more complete the shaft is put in, then the various hatches begin to show and the laying of decks begins. All through the construction everything is done with the greatest accuracy and fidelity to the drawings.

A shipyard is a busy place with its huge steam derricks lifting the iron plates, its many tracks filled with carloads of parts for ship, the hum of the machinery, the sound of the hammer and the moving about of thousands of workmen all contribute to make one feel that Uncle Sam is in earnest in his war against the Hun. Several times German propaganda has been spread among the workmen and strikes have been threatened, but at present it seems that each and every shipbuilder is ready to do his bit to back up the men in the trenches.

Launching.

Finally as the vessel nears completion the top decks are laid and the ship is made ready for the launching. This too, must be carried out along a certain rule, the deviation from which might cause a serious accident, and every shipbuilder breathes easier when he sees the big vessel hit the water in safety, although there are comparatively few accidents at launching. During the building of the craft she rests in a sort of cradle which consists of bilgeways built up of balks of timber bolted and doweled together and the slices or wedges which are employed at the ends of the ship. This cradle must be supported when the ship is to be launched. The groundways are cleaned and dried by burning shavings on them in preparation for the grease. The grease used consists of a mixture of tallow and train oil, the mixture being put on one-quarter of an inch thick. Pieces of wood known as dog-shores are fitted in between the groundways and a dogcleat to the bilgeway to prevent the cradle from sliding. Iron shoes are fitted in the end of the dogshore to prevent the ends from crushing. The finishing process preparatory to the launching is usually completed on the morning of the launching. When the hour arrives the trigger on the release gear is released and the ship glides down the ways to the music of the steam whistles of the nearby boats and the cheers of the builders. Each vessel is christened with wine or champagne just as the shipyard people prefer and usually some prominent woman or girl is asked to do the christening. One hundred and twenty vessels of the 7,000 and 8,000 ton class will be given Indian names. The wife of the President who is a descendant of Pocahontas has been asked to select the names and has already sent in the list of names she prefers.

Each vessel will require from one hundred to two hundred seamen and people are asking where and how they are to be obtained, but the Shipping Board is already making provision for this as well as for housing the ship-building workers. Training schools for men to man these ships have been opened in various parts of the country, some in far inland centers. Boys in the various manual training schools are studying the workings of an engine, the use of the sextant and compass and other things which will go far toward the making of a seaman.

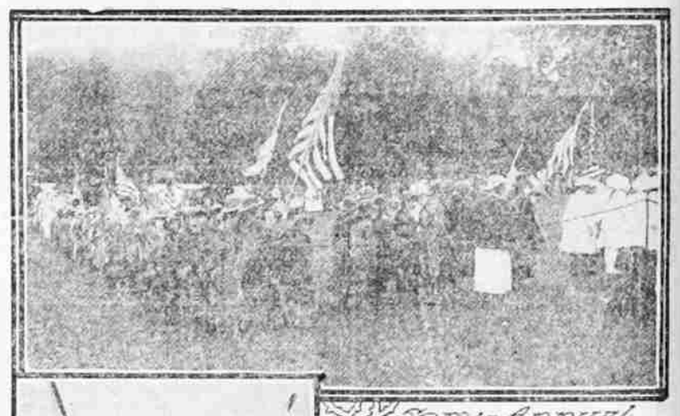
Girl Scouts Helping to Win the War

Mrs. Juliette Gordon Low, Organizer and President of the Girl Scouts of America

Helen Tew, a Washington Girl Scout, Who Last Year Won the War Food Garden Commission's Prize for Canning

Girl Scouts are Taught Home Care of the Sick

Eleanor Pulitzer, Second American Girl Scout to Receive "Golden Eaglet," Highest Honor in Girl Scout Movement



Semi-Annual Rally, Girl Scouts of Washington, D.C. 350 in Line

The Tenderfoot must Know the Alphabet in Signal Code Before She Passes Into the Second Grade

This Fine Organization Is Active In Many Directions, Icluding Red Cross Work, Home Economics, Garden Work, Canning Clubs, Helping the Alien, Selling Liberty Bonds, etc.

BACK OF THE FIRST, and back of the second, and still farther back, behind the third line of defense, is another line, which for over a year has been slowly but steadily and very thoroughly preparing to do its part in behalf of victory in the great war for liberty. This line represents the boys and girls of the nation, organized as Boy Scouts and Girl Scouts, eagerly watchful for opportunity for helpfulness, alert to perform the good deed, the right action in a trained and efficient manner.

There are now well over one hundred thousand girl scouts in America, a fifth of the world supply. Some of these girls will be the wives of the men who today are in the front line trenches, and their war work today should be, as it is the aim of the organization that it may be, "Woman's work cut down to girl size."

In All Fields.

There is scarcely an avenue of war work which has not been entered by the Girl Scouts of today. In the Red Cross service they have knitted and sewed and rolled bandages for the fighting men under the sacred insignia. For the same service they have been trained in canteen work, to give first aid to the injured, in home hygiene, dietetics, and infant care, in a manner to render them capable of performing such duties as a measure of home relief, which will be of real value when the majority of trained nurses have gone abroad.

In cooperation with the Department of Agriculture and the Food Administration, the Girl Scouts have taken up the study of home economics in the most whole-hearted manner with the result that in some cities they are employed to assist the Government's trained instructors in their demonstrations in the making of Victory breads, in the uses of substitutes for meat, sugar and fat and in war emergency generally.

Flag From Mrs. Wilson.

The Girl Scout organizations are linking up with the States Relations Service of the Department of Agriculture in the latter's Boys' and Girls' Club Work, and are raising gardens, corn, chickens and pigs as a material addition to the food supply of the nation. In their canning clubs they are cooperating with the Government's youthful workers for national conservation. In the Treasury department the work of Girl Scouts is recognized as a valuable factor. The first and second Liberty Loans had most efficient help from them, and the Woman's National Liberty Loan Committee looks to their Girl Scout allies with confidence in their ability to bring in rich returns on the third Liberty Loan. In recognition of their efforts in this direction Secretary McAdoo will present the Girl Scouts the same service medal for achievement as is being awarded the Boy Scouts. As further stimulus to supreme action in this cause there reposes at the Girl Scout headquarters in New York a beautiful white silk flag, the gift of Mrs. Woodrow Wilson, honorary President of the order, to be presented with a personal message from the donor to the Girl Scout troop in the United States which gives the best service to the third Liberty Loan. A flag is also to be given in each Federal Reserve district to the troop which sells the greatest number of bonds in that district. It is not the amount of the bonds that will count, but the number of bonds sold to different persons or in different homes.

In the Bureau of Education the Girl Scouts are performing distinct war service in connection with the Americanization of aliens. Their mission in this connection is to make foreign children who come within their influence substitute English words and sentences for those in foreign language. With the Department of Labor the Girl Scouts are cooperating to the extent of assisting jobless men and women to the bureaus of that department in the various cities which seek to fit each man and each woman to his and her right place in the national service of today.

Enthusiastic Gardeners.

The Girl Scouts all over the country accomplished splendid things in emergency garden work last season, and canned and dried their products with enthusiasm and skill which will stand them in good stead this season when the need for food production and conservation is more than ever pressing. In Washington, where many women of the official and social circle have allied themselves with the Girl Scout movement as a definite and valuable war endeavor, the garden work for the coming summer has been planned on a large scale, and big results are anticipated. Mrs. Herbert Hoover is chairman of the District of Columbia War Garden Committee, and she is making plans whereby every Girl Scout troop in Washington will have a war garden which will be a troop responsibility.

Even the "Brownies," the little Girl Scouts under ten, who are permitted to take their part in scout activities in preparation for the day when they will put on the full regalia of their elder sisters, are performing their own war work. These little-daughters of the woods, whose badge is the acorn and whose crest is the leaf, are knitting afghan squares for the invalids; packing comfort pillows to ease their injuries, and pasting pictures in scrap books for their amusement during convalescence.

Story Of The Girl Scouts.

The story of the organization of the Girl Scouts of America is interesting even picturesque. It was perhaps a dozen years ago that Mrs. Juliette Gordon Low, of Savannah, Georgia, happened to be present at the organization of the Boy Scouts of England by Sir Robert Baden-Powell, originator of the Scout idea and head of the British order. At that meeting Mrs. Low heard reports of six thousand English girls clamoring for an organization similar to that of their brothers, since there seemed no place among the Boy Scouts for girls. Sir Robert then suggested to his sister, Miss Agnes Baden-Powell, the formation of an order which has since become the Girl Guides. Shortly after this Mrs. Low had Sir Robert and Lady Baden-Powell on her Scottish estate as guests, and there was organized the first troop of Scottish Girl Guides.

On her return to America six years ago, Mrs. Low placed the direction of the Scottish Girl Guides in other hands and established the Girl Scout organization of America in her home city of Savannah, Georgia. Thence the movement moved upward to Washington, and on to New York, and the order has since been organized in every State of the Union but four, and in 209 cities and towns throughout the land. Until last year, when it became self-sustaining, Mrs. Low financed the order, setting aside every personal interest for the sake of the larger end.

A Talk With Head Of The Girl Scouts.

In a talk about the Girl Scouts and their work Mrs. Low said: "These girls are reaching out to help the country, and are coming to be of the greatest assistance in its time of stress. There whole previous training in scout work has rendered them alert and prepared for emergency war work here as they have been found in England. One of the tasks allotted to the girl Guides of England has been the charge of the bomb proof shelters in London, which are provided to serve in the case of enemy air raids. In these cellars are provided cots, first-aid supplies and food. The Girl Guides have their patrols and in the event of a raid they go on duty and direct the people to the shelters and in case of injury they care for them.

Three Grades.

There are three grades of Girl Scouts. To enter the third grade, or become a "Tenderfoot," the girl must be ten years old, or older, know the ten Scout laws, how to tie four specified knots, the history of the flag, and how to fly it. More difficult tests are applied for admission to the second and first class grades. To enter the second grade the girl has to show that she can sew, cook a simple meal, light a fire in the open, or in a stove, with two matches, know the alphabet in signalling, and know the points of the compass and can make an invalid's bed. To become a first class scout a girl must pass a yet more rigid test.

After a girl is a second class scout she becomes eligible for proficiency tests, and works for the proficiency badges, of which there are approximately forty. These she attaches in picturesque manner to the sleeve of her khaki blouse in the order of their attainment. Among the subjects for which she may strive to obtain the proficiency badge are, first aid, art, athletics, automobile driving, aviation, bird lore, boating, child-nursing, cooking, civics, public health, horsemanship, housekeeping, laundry, languages, music, marksmanship, natural history, photography, signalling, telegraphy, writing and swimming. "A fair number of proficiency badges on a girl's sleeve implies a liberal education," remarked an official of the organization, in referring to the scope of the subjects taught.

The Golden Eaglet.

The golden eaglet is the highest honor attainable by a Girl Scout, and to gain this the Girl Scout must take fourteen of seventeen required badges. But three American girls have gained this distinction of wearing the golden eaglet. A fourth is to receive it this month.

The expense attached to Girl Scout membership is normal, the only absolutely necessary expense for the individual Scout being the annual registration fee of 25 cents. The uniforms may be purchased from the organization or the simple khaki dress may be made by the girl herself, according to an official pattern.